QT-Brightek PLCC Series

5050 PLCC-8 RGBW LED

Part No.: QBLP679-RGBXW

RGB=Color Code

X: White Color Code
X=W (Warm White)
X=N (Natural White)
X=C (Cool White)

Table of Contents:

Introduction

Feature:

- Package in tape and reel
- Water clear lens for R/G/B
- Yellow diffused lens for WW NW CW
- Ultra bright PLCC-8 5050 Pkg
- InGaN technology for G/B/W
- AlInGaP technology for R
- Viewing Angle: 120 deg typ.
- MSL 5A
- Height profile: 1.65mm

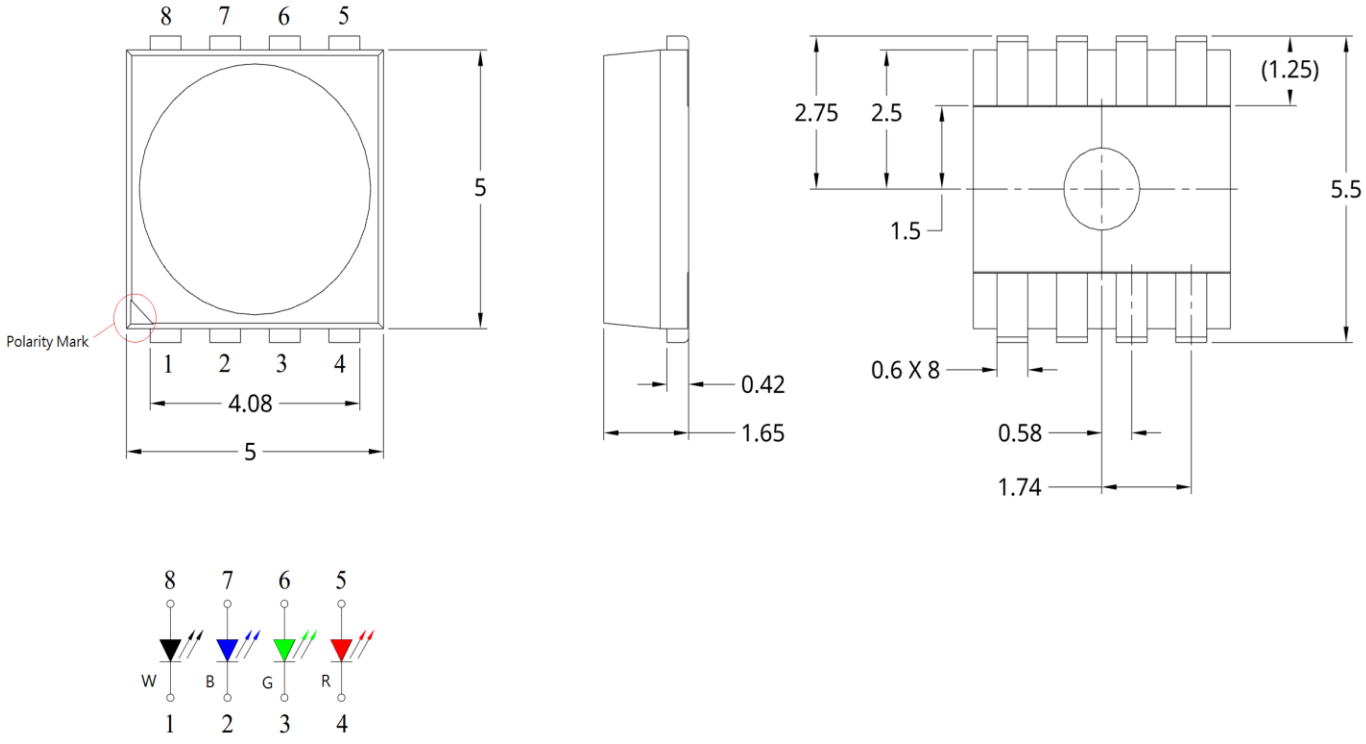
Application:

- Status indication
- Back lighting application
- Architecture lighting

Certification & Compliance:

- ISO9001
- RoHS Compliant

Dimension:



Units: mm / tolerance = +/-0.2mm

Electrical / Optical Characteristic (Ta=25 °C)

P/N	Color	I_F (mA)	V_F (V)		λ_D (nm)			I_V (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP679-RGBWW	Red	20	2.0	2.6	615	624	630	300	500
	Green	20	3.2	3.7	515	525	530	1500	2200
	Blue	20	3.2	3.7	460	470	475	200	450
					CIE Coordinate			Φv (lm)	
	Cool White (WW)	20	3.2	3.7	-	X=0.4055 Y=0.391 CCT: 3250K	-	6	8

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QBLP679-RGBNW	Red	20	2.0	2.6	615	624	630	300	500
	Green	20	3.2	3.7	515	525	530	1500	2200
	Blue	20	3.2	3.7	460	470	475	200	450
					CIE Coordinate			Φv (lm)	
	Cool White (NW)	20	3.2	3.7	-	X=0.3655 Y=0.365 CCT: 4300K	-	6	8

P/N	Color	I_F (mA)	V_F (V)		λ_D (nm)			I_V (mcd)	
			Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.
QBLP679-RGBCW	Red	20	2.0	2.6	615	624	630	300	500
	Green	20	3.2	3.7	515	525	530	1500	2200
	Blue	20	3.2	3.7	460	470	475	200	450
					CIE Coordinate			Φv (lm)	
	Cool White (CW)	20	3.2	3.7	-	X=0.317 Y=0.330 CCT: 6500K	-	6	8

Absolute Maximum Rating

Material	P_d (mW)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)	T_{SOL} (°C)**
AlInGaP (R)	78	30	100	5	-40 to +85	-40 to +85	260
InGaN (G/B/W)	111	30	100	5	-40 to +85	-40 to +85	260

*Duty Factor=10%, Frequency=1kHz

**IR Reflow for no more than 5 sec @ 260 °C

Luminous Intensity I_V for Red @ I_F=20mA

Bin	Min.	Max.	Unit
P	300	500	mcd
Q	500	700	
R	700	900	

Luminous Intensity I_V for Green @ I_F=20mA

Bin	Min.	Max.	Unit
V	1500	2000	mcd
W	2000	2500	
X	2500	3200	

Luminous Intensity I_V for Blue @ I_F=20mA

Bin	Min.	Max.	Unit
M	200	300	mcd
N	300	400	
O	400	500	

Luminous Flux Φv for White (WW/NW/CW) @ I_F=20mA

Bin	Min.	Max.	Unit
L0	6	8	lm
L1	8	10	
L2	10	12	
L3	12	14	

Dominant Wavelength λ_D for Red @ I_F=20mA

Bin	Min.	Max.	Unit
A	615	620	nm
B	620	625	
C	625	630	

Dominant Wavelength λ_D for Green @ I_F=20mA

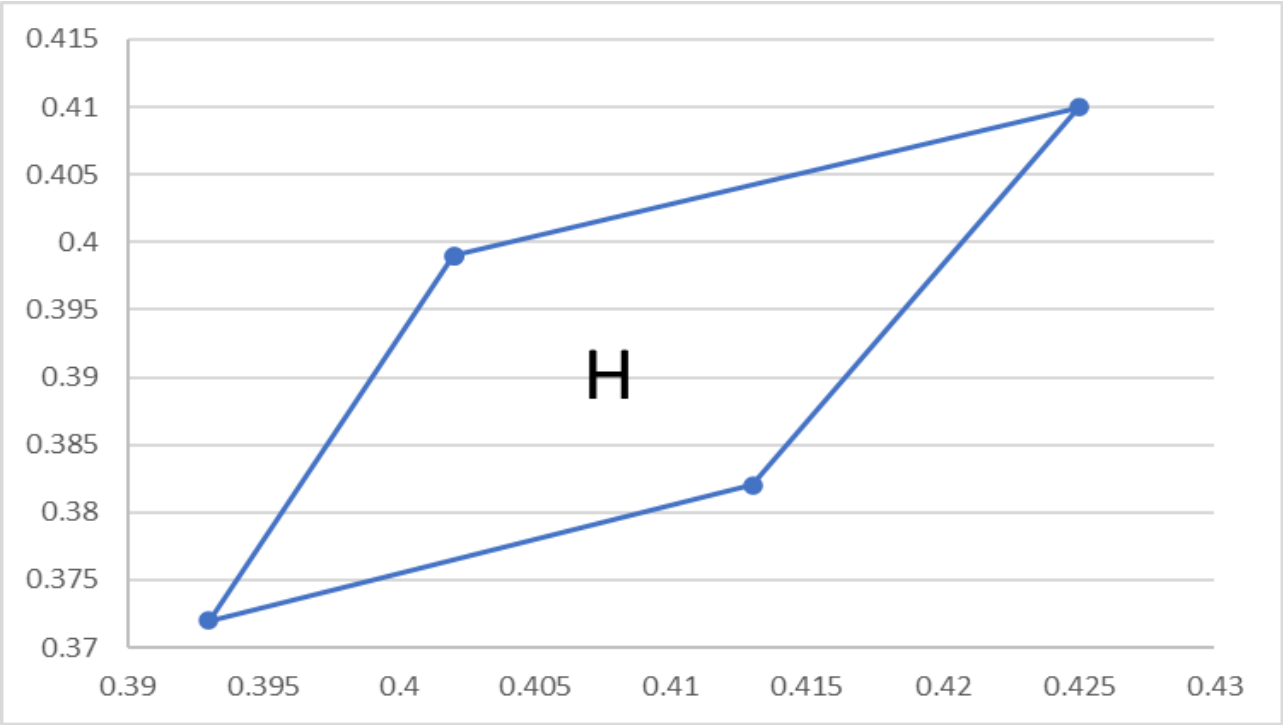
Bin	Min.	Max.	Unit
A	515	520	nm
B	520	525	
C	525	530	

Dominant Wavelength λ_D for Blue @ I_F=20mA

Bin	Min.	Max.	Unit
A	460	465	nm
B	465	470	
C	470	475	

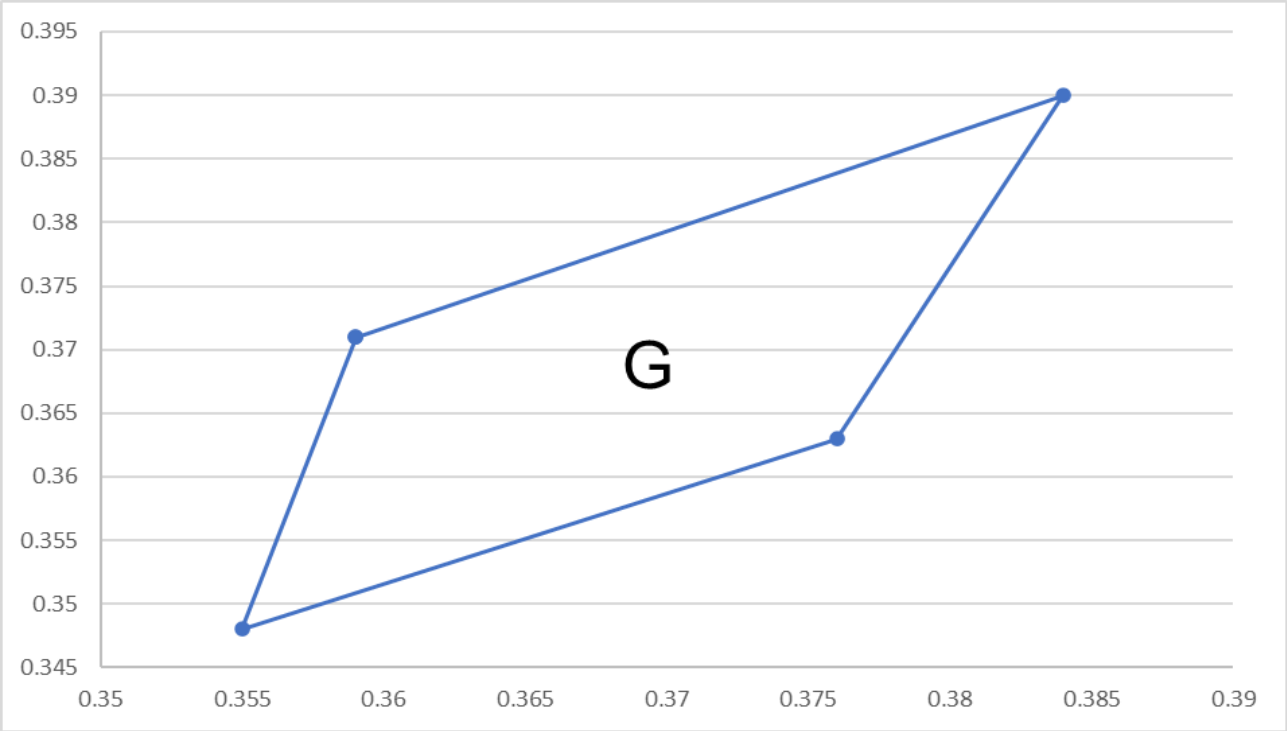
CIE Chromaticity Diagram

Warm White (WW)



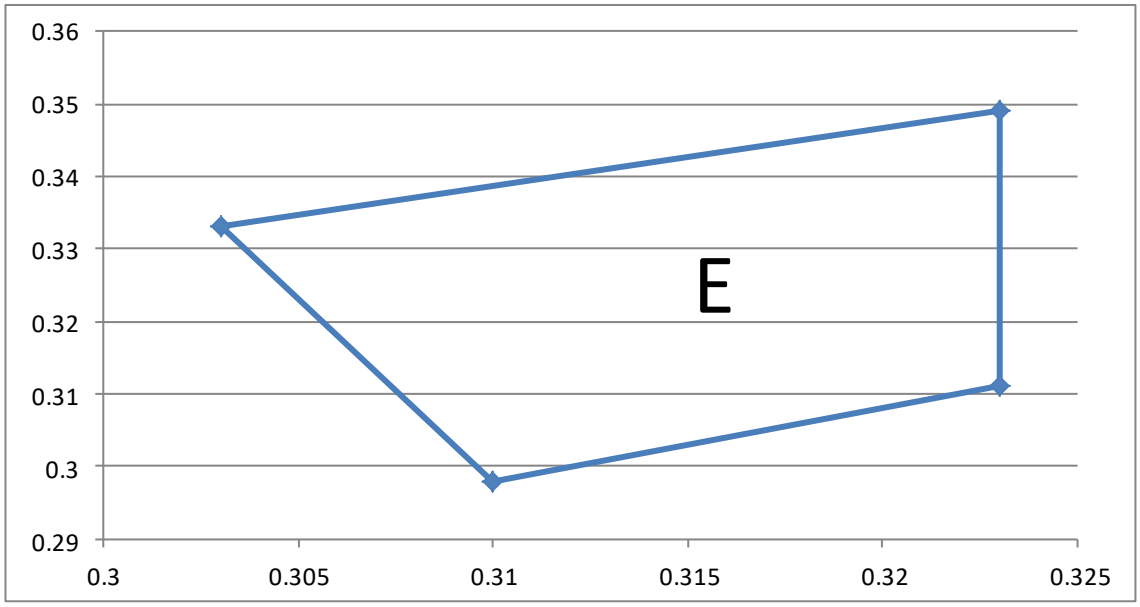
H	
0.402	0.399
0.425	0.41
0.413	0.382
0.393	0.372
0.402	0.399

Natural White (NW)



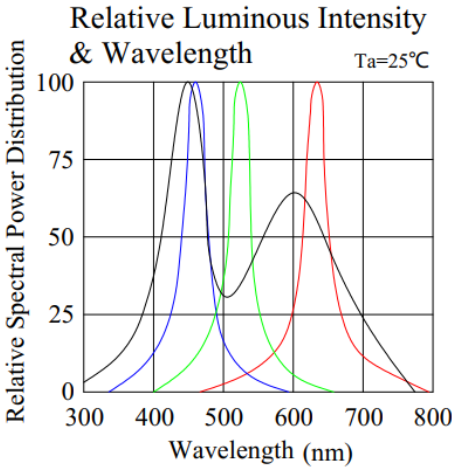
G	
0.359	0.371
0.384	0.39
0.376	0.363
0.355	0.348
0.359	0.371

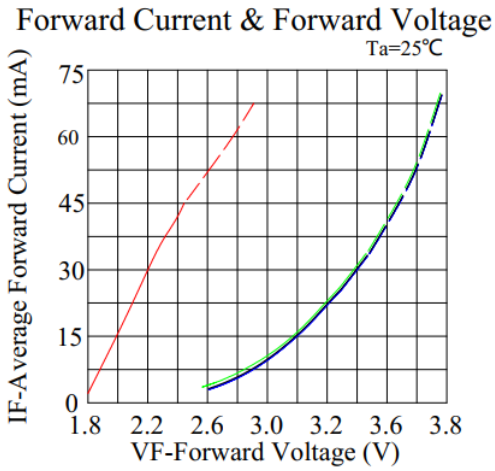
Cool White (CW)

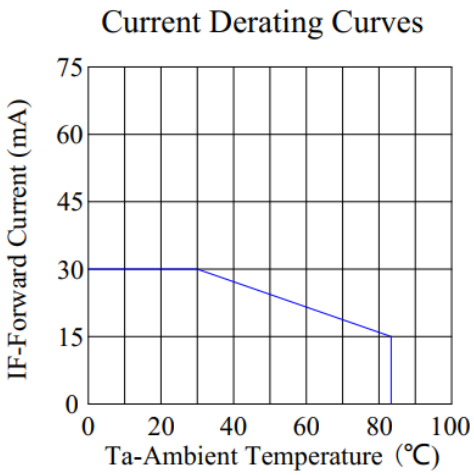


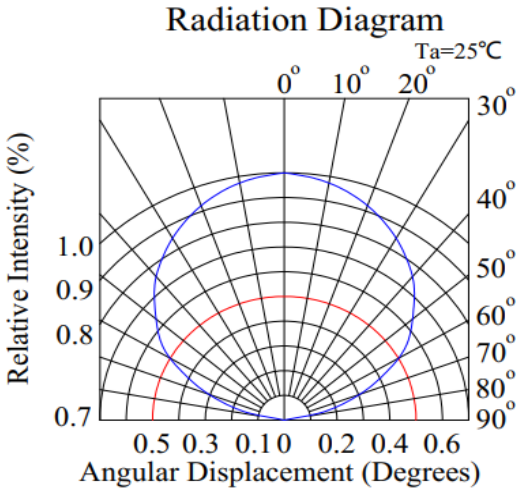
E	
0.303	0.333
0.323	0.349
0.323	0.311
0.310	0.298
0.303	0.333

Characteristic Curves

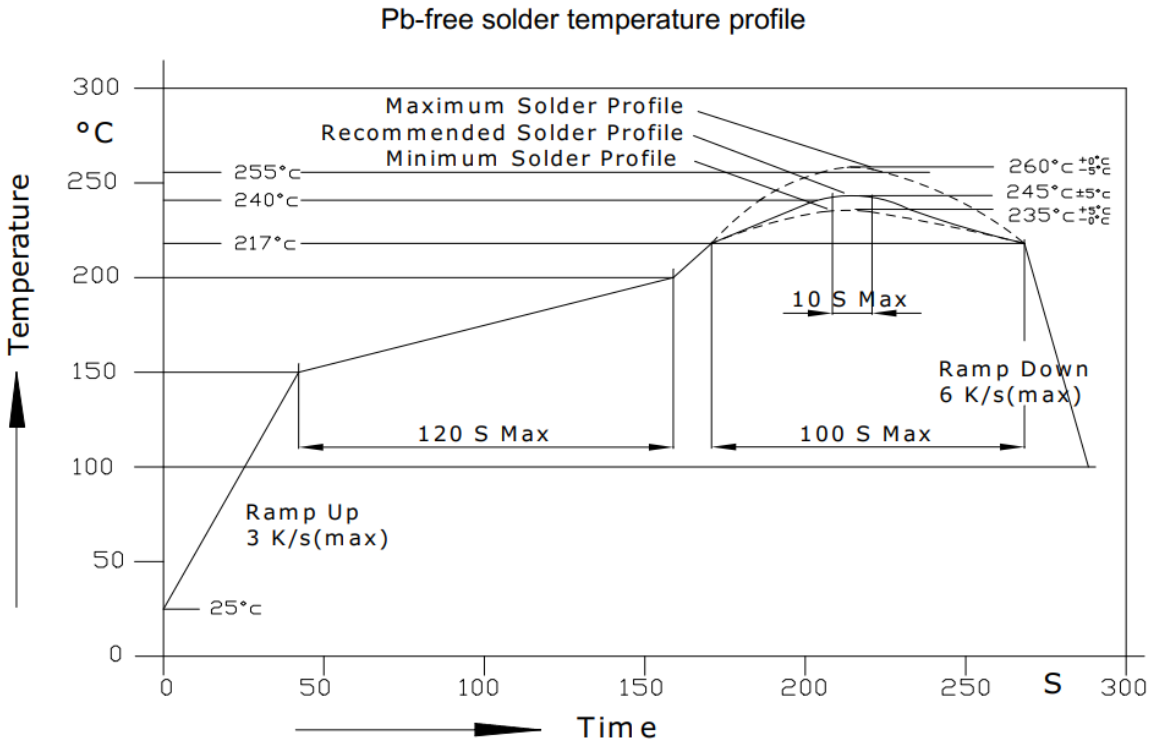




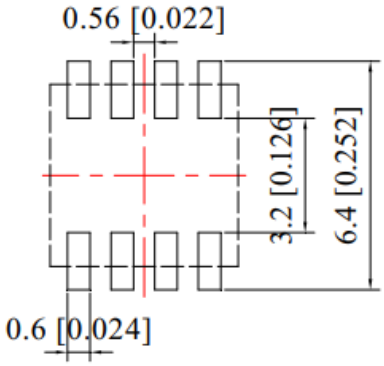




Solder Profile & Footprint



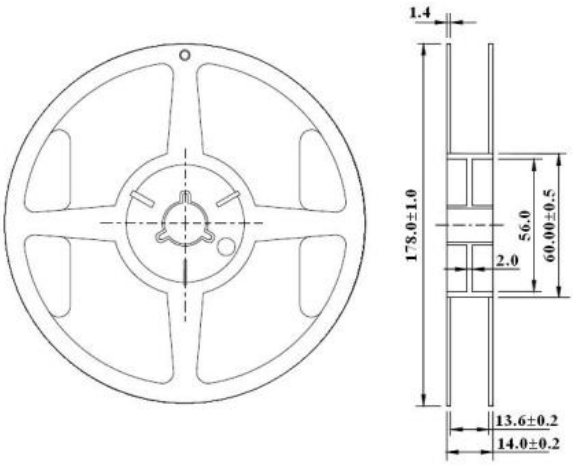
Recommended Soldering Pad Layout



Units: mm

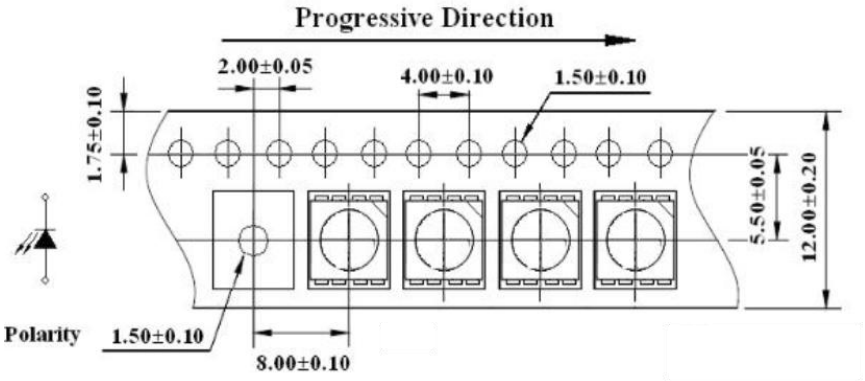
Packing

Reel Dimensions:



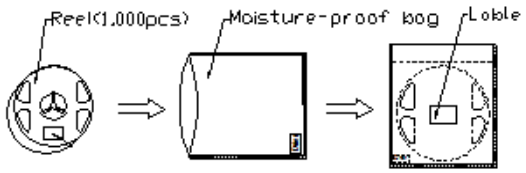
Unit: mm

Tape Dimension and Arrangement:



Unit: mm

Packaging Specifications:



Ordering Information

Orderable Part #	Spec Range	Quantity per reel
QBLP679-RGBWW	Red: Iv=500mcd typ. @ 20mA / λ_D=615nm to 630nm	1,000 units
	Green: Iv=2200mcd typ. @ 20mA / λ_D=515nm to 530nm	
	Blue: Iv=450mcd typ. @ 20mA / λ_D=460nm to 475nm	
	White: Φv=8lm typ. @ 20mA / (X=0.4055, Y=0.391) typ. CCT: 3250K typ.	

Orderable Part #	Spec Range	Quantity per reel
QBLP679-RGBNW	Red: Iv=500mcd typ. @ 20mA / λ_D=615nm to 630nm	1,000 units
	Green: Iv=2200mcd typ. @ 20mA / λ_D=515nm to 530nm	
	Blue: Iv=450mcd typ. @ 20mA / λ_D=460nm to 475nm	
	White: Φv=8lm typ. @ 20mA / (X=0.3655, Y=0.365) typ. CCT: 4300K typ.	

Orderable Part #	Spec Range	Quantity per reel
QBLP679-RGBCW	Red: Iv=500mcd typ. @ 20mA / λ_D=615nm to 630nm	1,000 units
	Green: Iv=2200mcd typ. @ 20mA / λ_D=515nm to 530nm	
	Blue: Iv=450mcd typ. @ 20mA / λ_D=460nm to 475nm	
	White: Φv=8lm typ. @ 20mA / (X=0.317, Y=0.330) typ. CCT: 6500K typ.	

Revision History

Description:	Revision #	Revision Date
New Release of QBLP679-RGBXW	V1.0	04/30/2019
Update dimension drawing	V1.1	05/26/2022
Adding WW and NW options	V1.2	02/11/2025

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.